

Listing of Claims

This listing of claims replaces all prior versions, and listings, of claims in the application:

1-9. (Canceled)

10. (Previously Presented) A lithography system, comprising:

a lithography system comprising:

a polarization modulator configured to change light which is applied thereto from a first polarization profile to a second polarization profile different than the first polarization profile; and

a stress modulator in communication with the polarization modulator, the stress modulator to apply stress to the polarization modulator, wherein the stress modulator is configured to apply stress to an outer surface of the polarization modulator to obtain a polarization profile at an imaging plane wherein the polarization profile exhibits substantially azimuthal symmetry.

11. (Canceled)

12. (Previously Presented) A lithography system, comprising:

a polarization modulator configured to change light which is applied thereto from a first polarization profile to a second polarization profile different than the first polarization profile; and

a stress modulator in communication with the polarization modulator, the stress modulator to apply stress to the polarization modulator, wherein the lithography system comprises an immersion lithography system.

13. (Canceled)

14. (Currently Amended) A lithography system, comprising:

a lithography system, comprising:

a polarization modulator configured to change light which is applied thereto from a first polarization profile to a second polarization profile different than the first polarization profile; and

a stress modulator in communication with the polarization modulator, the stress modulator to apply normal stress on a curved surface of ~~to~~ the polarization modulator, wherein the stress modulator is configured to apply stress using expansion.

15. (Currently Amended) A lithography system, comprising:

a lithography system, comprising:

a polarization modulator configured to change light which is applied thereto from a first polarization profile to a second polarization profile different than the first polarization profile; and

a stress modulator in communication with the polarization modulator, the stress modulator to apply normal stress on a curved surface of to the polarization modulator, wherein the stress modulator is configured to apply stress by heating at least one of the stress modulator and the polarization modulator.

16. (Previously Presented) A lithography system, comprising:

a lithography system, comprising:

a polarization modulator configured to change light which is applied thereto from a first polarization profile to a second polarization profile different than the first polarization profile; and

a stress modulator in communication with the polarization modulator, the stress modulator to apply normal stress on a curved surface of to the polarization modulator, wherein the stress modulator is configured to apply stress by cooling at least one of the stress modulator and the polarization modulator.

17. (Previously Presented) A lithography system, comprising:

a polarization modulator configured to change light which is applied thereto from a first polarization profile to a second polarization profile different than the first polarization profile; and

a stress modulator in communication with the polarization modulator, the stress modulator to apply stress to the polarization modulator, further comprising:

another polarization modulator positioned to receive light having a received polarization profile and to transmit light having a different transmitted polarization profile; and

another stress modulator in communication with the another polarization modulator, the another stress modulator to apply stress to the another polarization modulator.

18-23. (Canceled)

24. (Previously Presented) A method of modifying the polarization of light, comprising:

 applying stress to a polarization modulator;

 receiving light of a first polarization state in the polarization modulator;

 modifying the polarization of light within the polarization modulator;

 detecting a parameter related to one or more characteristics of the light; and

 transmitting light of a second polarization state different than the first polarization state from the polarization modulator; and

forming a pattern on a substrate using the transmitted light,

 wherein the parameter is related to the second polarization state.

25. (Previously Presented) A method of modifying the polarization of light, comprising:

 applying stress to a polarization modulator;

 receiving light of a first polarization state in the polarization modulator;

modifying the polarization of light within the polarization modulator;

transmitting light of a second polarization state different than the first polarization state from the polarization modulator ~~wherein the parameter is related to the second polarization state~~;

detecting a parameter related to one or more characteristics of the second polarization state of the light; and

forming a pattern on a substrate using the transmitted light, and

wherein the parameter is ~~a parameter~~ based on the pattern.

26-28. (Canceled)

29. (Currently Amended) ~~A polarization control An~~ apparatus, comprising:

a component of a lithography system, including:

a polarization modulator configured to change polarize light ~~which is applied thereto~~ transmitted therethrough from a first polarization profile to a second polarization profile different than the first polarization profile;

a stress modulator in communication with the polarization modulator, the stress modulator to apply normal stress on a curved surface of to the polarization modulator to induce birefringence and to change the polarization of light transmitted through the polarization modulator;

a controller configured to receive a signal based on a parameter related to one or more characteristics of the transmitted light, the controller in communication with the stress modulator and configured to control the stress; and

a light sensor positioned to receive at least a portion of the transmitted light, the light sensor in communication with the controller wherein the signal based on the parameter is a signal from the light sensor;

wherein the parameter is based on the second different polarization profile.

30. (Currently Amended) A polarization control apparatus, comprising:

a polarization modulator configured to change light which is applied thereto from a first polarization profile to a second polarization profile different than the first polarization profile;

a stress modulator in communication with the polarization modulator, the stress modulator to apply stress to the polarization modulator;

a controller configured to receive a signal based on a parameter related to one or more characteristics of the transmitted light, the controller in communication with the stress modulator and configured to control the stress; and

a substrate including a pattern formed using the transmitted light, and

wherein the parameter is based on the pattern.

31. (New) The lithography system of claim 12, wherein the stress modulator is to apply stress to the polarization modulator to obtain a polarization profile that exhibits substantially azimuthal symmetry at an imaging plane.

32. (New) The lithography system of claim 14, wherein the stress modulator is to apply stress to the polarization modulator to obtain a polarization profile that exhibits substantially azimuthal symmetry at an imaging plane.

33. (New) The lithography system of claim 15, wherein the stress modulator is to apply stress to the polarization modulator to obtain a polarization profile that exhibits substantially azimuthal symmetry at an imaging plane.

34. (New) The lithography system of claim 16, wherein the stress modulator is to apply stress to the polarization modulator to obtain a polarization profile that exhibits substantially azimuthal symmetry at an imaging plane.

35. (New) The lithography system of claim 17, wherein the stress modulator is to apply stress to the polarization modulator to obtain a polarization profile that exhibits substantially azimuthal symmetry at an imaging plane.

36. (New) The method of claim 24, wherein applying stress to the polarization modulator comprises inducing birefringence in the polarization modulator.

37. (New) The method of claim 24, wherein applying stress to the polarization modulator comprises applying normal stress on a curved surface of the polarization modulator.

38. (New) The method of claim 25, wherein applying stress to the polarization modulator comprises inducing birefringence in the polarization modulator.

39. (New) The method of claim 25, wherein applying stress to the polarization modulator comprises applying normal stress on a curved surface of the polarization modulator.

40. (New) The apparatus of claim 29, wherein the stress modulator is to apply stress to the polarization modulator to obtain a polarization profile that exhibits substantially azimuthal symmetry at an imaging plane.

41. (New) The polarization control apparatus of claim 30, wherein:

the polarization control apparatus comprises an optical lithography system;

the light comprises a lithographic light suitable for patterning the substrate.

42. (New) The polarization control apparatus of claim 30, wherein the stress modulator is to apply stress to the polarization modulator to obtain a polarization profile that exhibits substantially azimuthal symmetry at an imaging plane.